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STATE OF IOWA
DEPARTMENT OF COMMERCE
BEFORE THE IOWA UTILITIES BOARD

IN RE: COMPLAINTS OF HELEN ADOLPHSON AND CHARLOTTE SKALLERUP	DOCKET NO. FCU-2013-0006

REPORT ON INVESTIGATION

Pursuant to the orders dated October 14 and December 16, 2014, the Office of Consumer Advocate (OCA), Iowa Department of Justice, submits the following report:

1. This formal complaint docket is one of six such dockets commenced at about the same time addressing intrastate rural call completion failures in Iowa. OCA has previously filed extensive reports in two of the other dockets. See *In re Complaint of Frahm*, No. FCU-2013-0007, report filed November 13, 2014; *In re Complaint of Rehabilitation Center of Allison*, No. FCU-2012-0019, report filed December 19, 2014.[1]

2. This report concentrates on the information specific to this docket. It should be read in conjunction with the earlier reports referenced above. It does not repeat the general information provided in the earlier reports. It does repeat, largely without change, the steps that OCA has suggested originating and intermediate long distance carriers should take as a means of restoring the reliability of the network and hence of achieving a long-term solution to the problem.

[1]See also *In re Complaint of UnityPoint Clinic Family Medicine at Huxley*, No FCU-2013-0004, report filed Jan. 9, 2015; *In re Complaint of Hancock County Health Systems*, No. FCU-2013-0005, report filed Jan. 16, 2015.

NOTE: Confidential material has been identified by placing it between curly brackets {}.

Adolphson and Skallerup Complaints

3. In complaints submitted January 17 and 19, 2013, sisters Helen Adolphson of Red Oak, Iowa, and Charlotte Skallerup of Glenwood, Iowa, stated that phone calls were repeatedly not completing correctly to their 97-year-old mother, Faye Wookey, in Emerson, Iowa.[2] Adolphson stated she at times heard ringing but her mother heard nothing. Other times, she heard one or two rings, then a busy signal or drop. Still other times, the connection was so poor that she and her mother could not hear one another. Skallerup stated the calls would at times go dead after ringing once or twice. Other times, the first ring or two would sound fine, but then the ring would sound garbled, and she and her mother could not understand one another. She at times tried as many as eight to ten times and might get through. She could tell immediately whether the ring sounded clear and the call would be proper. Their mother experienced no difficulty on outgoing calls.

4. As detailed in periodic reports submitted by OCA, Adolphson and Skallerup for a time reported no new call completion difficulties subsequent to the time they filed a complaint with the Board. On December 31, 2013, however, Skallerup sent a letter to the Board advising of renewed difficulties.[3] The specific concern expressed in the letter was a failed series of attempted calls from England on New Year's Eve. The caller could reach Skallerup in Red Oak but not Wookey in Emerson. On January 8, 2014, Qwest Corporation d/b/a CenturyLink QC (CenturyLink) advised that the difficulties on the calls from England would need to be investigated by the calling party's

[2]Emerson (population 438) is nine miles west of Red Oak and twenty-one miles east of Glenwood. Population figure is from 2010 census.

[3]The letter was filed of record on January 6, 2014.

long distance carrier. CenturyLink also advised that Adolphson had reported a few failed or garbled calls to her mother over the previous three weeks. On February 6, 2014, OCA advised that, while Adolphson and Skallerup were both aware of several difficulties regarding calls to their mother in late December 2013 and early January 2014, they had not experienced more recent difficulties. On subsequent inquiries, most recently by telephone on January 6, 2015, they similarly indicated no further difficulties.

CenturyLink Responses: Original Complaint

5. In a letter to Board staff dated March 21, 2013, CenturyLink, the long distance carrier for Adolphson and Skallerup, responded that following receipt of the complaint it had opened a trouble ticket and searched its call records for the problematic calls reported by Adolphson and Skallerup. It did not find all of the calls, but it did find several. Upon testing, the technician determined the routing was the source of the problem in all three cases. The technician removed intermediate carrier InterMetro, Inc. as an intrastate routing option on calls to the 712-824 NPA-NXX in Emerson. Following the routing change, CenturyLink verified that the calls were completing correctly. CenturyLink also opened a trouble ticket with InterMetro.

6. Discovery responses from CenturyLink confirmed the information provided in the March 2013 response. They added some specifics on the calls that were found: one "had a poor connection, faint and garbled, and it cut out"; a second had "a loud ping noise while talking"; a third evidently had a long ring time, and the line was garbled when the call was finally answered; when the caller called back five minutes later, there was a lot of noise on the line. OCA Exhibits CL-1, CL-2, CL-3. Discovery

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responses also confirmed that CenturyLink had opened a trouble ticket with InterMetro. OCA Exhibits CL-1, CL-3, CL-5, CL-6.

7. When asked to explain why CenturyLink concluded that removal of the intermediate carrier would solve the problem, CenturyLink responded: "with [the intermediate carrier] out of the routing to that NPA-NXX, it would ensure that calls could process appropriately to all customers in that area." OCA Exhibit CL-4. The response continued:

> When investigating this type of complaint, the technician searches the switch data to find the specific calls, and then pulls the Call Detail Record (CDR) for the call. The technician then looks at the details in the call records that show the start and stop times of the call, and the calling and called numbers, to match the record to the call in the complaint. Then the technician looks at other fields in the CDR, based on the issue in the complaint, to verify that the records show that the issue identified is indicated in the data. Each switch type's data is presented in a unique way, so the technicians have to know which data fields to focus on, by switch type. In cases such as this, the technician focuses on the data regarding the routing, to see if the call was routed using an underlying carrier. The technician looks for the audio indicator and the timing indicators for the duration of the call. If an underlying carrier was used to carry the call, the technician, after the review of the call data, determines if there is potential that the underlying carrier is the cause of the routing or other issues that were identified as the customer's problem. The technician opens a trouble ticket with the underlying carrier, so that the underlying carrier can do its own investigation on the call. The technician also takes the underlying carrier out of the route for that call's NPA NXX, and then tests to see if the trouble goes away with the underlying carrier removed.

OCA Exhibit CL-4.

8. The routing change was made on a temporary basis by the technician on March 11, 2013. OCA Exhibits CL-7, CL-9. At a later time, with the temporary change in place, the senior engineer manually made a long-term change in the {[redacted]}

routing table. OCA Exhibit CL-9. Although the record is not clear, the routing change may have extended to interstate as well as intrastate calls. OCA Exhibit CL-19.

9. Before the routing change, the first five positions in CenturyLink's intrastate routing sequence were: {[redacted]}. OCA Exhibits CL-10, CL-13. {[redacted]}.

10. After the routing change, {[redacted]}. OCA Exhibit CL-9. {[redacted]}. OCA Exhibits CL-11, CL-14. {[redacted]}. See OCA Exhibits CL-12, CL-15, CL-23.

11. When asked to explain any financial consequences to CenturyLink of removing InterMetro from the routing on intrastate calls to the 712-824 NPA-NXX, CenturyLink responded that {[redacted]}. OCA Exhibit CL-16.

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12. CenturyLink declined to produce the contract between CenturyLink and InterMetro. OCA Exhibit CL-21.[4]

13. According to data provided by CenturyLink in No. FCU-2012-0019, *In re Complaint of Rehabilitation Center of Allison*, {[redacted]}. See OCA report, filed Dec. 19, 2014, ¶ 47.

14. The spreadsheets provided by CenturyLink in *Allison* do not show any complaints to CenturyLink, other than Adolphson's and Scallerup's, regarding call completion related difficulties on calls to the 712-824 NPA-NXX during 2011, 2012 or 2013. The number of complaints, however, does not necessarily reflect the extent of the difficulties. As observed elsewhere, many people use their cell phones when an attempted call fails. When they do, the difficulties are commonly not recorded. See *In re Complaint of Hancock County Health Systems,* No. FCU-2013-0005, OCA report filed Jan. 16, 2015, ¶¶ 4, 12. Difficulties did recur in January 2014, as discussed in the next section of this report.

15. When asked to describe each component of the physical facilities that are used to carry a long distance call from Adolphson's or Skallerup's phone to Wookey's, using {[redacted]}, CenturyLink responded:

[4]A motion to compel may have succeeded in obtaining the document. See *Harris v. Board of Governors of Federal Reserve System*, 938 F.2d 720, 723 (7th Cir. 1991) ("The rights of a party to obtain documents under judicial process are not enjoyed at the sufferance of third parties who have agreed between themselves to keep documents secret.") Constraints of time and resources, however, prevent OCA from pursuing every hindrance to exhaustion.

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> The call originates from the Local end office switch and is delivered to the SS-7 TDM FG-D access circuits CenturyLink LD has installed into the end office. The TDM FG-D circuits are connected to the {[redacted]}, where it queried for routing instructions, and was then transported via SIP-1 IP inter-machine trunk groups across CenturyLink's national fiber network to {[redacted]} (this is one of three potential gateways it may have hit {[redacted]}. At the {[redacted]} LD switch, the call was delivered to SS-7 TDM trunk groups installed with InterMetro. Once the call was handed to InterMetro, they were to deliver the call via their terminating network to the terminating LEC.

OCA Exhibit CL-24, OCA Exhibit CL-25. {[redacted]}.

CenturyLink Responses: January 2014

16. At 7:41 a.m. on January 8, 2014, and again at 7:45 a.m., when attempting to call her mother, Adolphson received "strange voice mail messages" that were neither her mother nor her mother's voice mail. A third call, at 7:48 a.m., completed correctly. The technician who investigated the matter determined the routing was the issue and removed intermediate carrier IntelePeer[5] from the routing to the 712-824 NPA-NXX. Following the removal, calls completed successfully. OCA Exhibits CL-17, CL-18.

17. The routing change was made on January 8, 2014. The technician manually changed the {[redacted]} routing table so that calls to the 712-824 NPA-NXX would {[redacted]}

[5]IntelePeer was a financially troubled company acquired by Peerless Network, Inc., in November 2013, and subsequently renamed Airus, Inc. See *In re Complaint of Frahm*, OCA report dated Nov. 13, 2014, ¶ 12; *In re Complaint of Hancock County Health Systems*, report dated Jan. 16, 2015, ¶ 15.

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{[redacted]}. OCA Exhibits CL-30, CL-31. The change applied to interstate as well as intrastate calls. OCA Exhibit CL-29.

18. Before the routing change, the first five positions in CenturyLink's intrastate routing sequence were: {[redacted]}. OCA Exhibits CL-32. {[redacted]}.

19. Immediately after the routing change, the first five positions in CenturyLink's intrastate routing sequence were: {[redacted]}. OCA Exhibit CL-33. When asked about subsequent changes, CenturyLink responded: "CenturyLink routing changes can occur on an ongoing basis, however, {[redacted]}. OCA Exhibit CL-34.

20. When asked to explain any financial consequences to CenturyLink of removing InterMetro from the routing on calls to the 712-824 NPA-NXX, CenturyLink responded that the estimated cost impact was {[redacted]} monthly for interstate traffic and {[redacted]} monthly for intrastate traffic, The figures were not explained. OCA Exhibit CL-35.

21. CenturyLink notified IntelePeer of the routing change on February 5, 2014. OCA Exhibits CL-27, CL-28. IntelePeer advised it would provide a detailed response. OCA Exhibit CL-27, p. 5.

22. CenturyLink declined to produce the contract between CenturyLink and IntelePeer. OCA Exhibit CL-36.[6]

23. When asked whether it had an understanding of what could cause the strange voice mail messages, CenturyLink responded it has no verified reason to offer in response to this question and that any opinion it might offer would be pure speculation. OCA Exhibit CL-26.

InterMetro Responses

24. In a letter to Board staff dated April 17, 2013, InterMetro Communications, Inc. (InterMetro)[7] advised that it had received the calls referenced in the Adolphson and Skallerup complaints from CenturyLink and had passed them to a downstream provider. According to the letter, InterMetro researched the matter, identified an intermittent problem, and permanently removed its downstream provider from call delivery in Iowa. InterMetro then coordinated with CenturyLink to verify with Adolphson and Skallerup that the problem had been resolved. InterMetro declined to identify its downstream provider, prompting Board staff to recommend that the Board commence a formal proceeding, which it subsequently did.

25. In discovery, InterMetro identified its downstream provider as I.T. Source Corporation d/b/a Massive Telecom ("I.T.S"). OCA Exhibit IM-1.

26. InterMetro provided an explanation of the problem that can be summarized as follows: I.T.S. had expressly represented to InterMetro that the I.T.S.

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[6]See note 4 above.

[7]According to its website, InterMetro owns and operates a national, private, proprietary voice-over Internet Protocol (VoIP) network infrastructure.

product would be directly connected exclusively to "Tier 1" providers. In early 2013, InterMetro was concerned about the quality of the services provided by I.T.S. I.T.S. stated the difficulties were temporary. It attributed them to "hardware" and "capacity" problems. InterMetro initially removed I.T.S. from several rural routes. While investigating the issues in this and other cases, InterMetro learned that I.T.S. had not been providing "Tier 1 only" service. In mid-March 2013, InterMetro ended the relationship. OCA Exhibit IM-2.

27. The explanation concluded by saying that InterMetro's termination of its relationship with I.T.S. "had already been put in motion (and likely had fully occurred) when InterMetro received the letter dated March 22, 2013, from the Board." OCA Exhibit IM-2. Documentation from InterMetro on the timing is inconclusive.[8] So is documentation from CenturyLink.[9]

28. InterMetro described a "Tier 1" carrier as follows:

> A Tier-1 carrier product provides direct connections to only other Tier-1 carriers, with the topmost level of network quality and connectivity. Only the largest telecommunications carriers qualify as Tier-1 carriers. A Tier-1 network carrier is also one that participates in the internet solely via settlement-free interconnection, further providing the greatest reliability

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[8]When asked for the date when I.T.S. was removed from routing on calls to Iowa destinations, and for any notice of removal, InterMetro responded: "there is no formal 'notice of removal' sent to I.T.S. and therefore no such notice to produce. InterMetro cannot verify the exact date when I.T.S. was removed from all Iowa routes, and certain specific routes (like those for Adolphson and Skallerup) may have been removed in troubleshooting prior to the statewide date. At the latest, I.T.S. was removed from all routes in Iowa in mid-March, when the relationship was severed." OCA Exhibit IM-3.

[9]A communication from CenturyLink to InterMetro dated March 21, 2013, indicated that CenturyLink had "previously" relayed to InterMetro that "long distance traffic termination issues are becoming very prevalent across the nation, with many ongoing regulatory proceedings." The communication specifically referenced the Adolphson and Skallerup complaints. OCA Exhibit CL-3, p. 2. Board staff had sent the Adolphson and Skallerup complaints to CenturyLink for response on January 17 and 24, 2013.

> and quality. Tier-2 and Tier-3 networks typically resell services from the larger Tier-1 network providers combined with other Tier-2, Tier-3, and other lesser tiered providers. These lower tier networks offer a lower quality level of connectivity and reliability, typically at a lower price.

OCA Exhibit IM-2.[10]

29. Section 8 of the contract between InterMetro and I.T.S., executed February 14, 2011, provided, in capital letters, that the services will be made available "ON A BEST-EFFORTS BASIS." I.T.S. made no warranties of any kind, express or implied, as to the availability or quality of the services. Any warranty of merchantability or fitness for a particular purpose was expressly disclaimed. Section 15 of the contract required that I.T.S. "exercise commercially reasonable efforts, but shall not be obligated, to provision services with sufficient capacity to meet [InterMetro's] forecasted demand." OCA Exhibit IM-1.

30. Section 3.7 of the same contract provides that "usage charges are based on actual usage of [I.T.S.'s] services and begin when the called party answers, as determined by answer supervision." The contract then provides: "If answer supervision does not detect an answer or a disconnect within fifty-four (54) seconds, [I.T.S.] may disconnect the call and bill the call for (1) minute." OCA Exhibit IM-1. The latter provision appears to provide a financial incentive for failure to complete.

31. A data request asking for InterMetro's long-term solutions to the call completion problem has been outstanding to InterMetro since September 2014.

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[10]In April 2010, the FCC regarded the following IXCs/ISPs, evidently among others, as tier 1 carriers: ATT, Sprint, GX, Verizon Business, Level 3, XO, TWTC. *In the Matter of Connect America Fund*, 25 F.C.C.R. 6657 (Apr. 21, 2010), p. 128. See also *In re Complaint of Hancock County Health Systems*, No. FCU-2013-0005, OCA report filed Jan. 16, 2015, ¶ 54.

Concrete Steps toward a Long-Term Solution

32. The following are concrete steps that CenturyLink and InterMetro should take as elements of a long-term solution to the problem. These suggested actions are intended to complement the work of the FCC, including the data collection and reporting to be implemented pursuant to the FCC rules. These suggested actions are also appropriate for consideration in a rule-making proceeding, which could afford long-term solutions industry-wide.

Step 1

Acknowledge responsibility for the performance of downstream carriers.

33. The FCC has recently emphasized in a related context the need for "end-to-end" carrier responsibility and accountability from the time a call is placed to the time it is completed.[11] Such end-to-end responsibility is a prerequisite to solving the rural call completion problem. The first step in a long-term solution to the problem is for originating and upstream intermediate carriers to acknowledge responsibility for the performance of the downstream intermediate carriers they engage to complete the calls.

[11] "April 2014 Multistate 911 Outage: Cause and Impact, Report and Recommendations," Public Safety Docket No. 14-72 (FCC Oct. 2014). Although the focus of the report was the vulnerability of the 911 system, the factors that account for this vulnerability, including the increasing reliance of IP-supported networks on geographically remote servers and on software-based components to support key functions, are equally applicable to the public telephone network as a whole.

Step 2

Maintain on file with the Board a list of downstream carriers currently being used to carry Iowa traffic.

34. A simple filing of this character, with contact information for the downstream carriers, updated as changes occur, will keep the Board apprised of the identity of the companies that are carrying the Iowa traffic.

Step 3

Reduce the number of intermediate providers in the call paths.

35. A key reason for the increased problems in rural areas is that a call is often handled by numerous different providers, the identities of which may not even be known to the originating provider, resulting in nearly untraceable call routes. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 16154(Nov. 8, 2013) ¶¶ 17, 87, 88. A provider that limits the number of intermediate providers in the call path is better able to manage performance to rural destinations than a provider that sends calls through numerous intermediate providers. Limiting the number of intermediate providers also limits the potential for lengthy setup delay and looping. *Id.* If a carrier can implement the "safe harbor" in the federal rules by limiting the number of intermediate providers on a call path to two or fewer, see 47 C.F.R. § 2107, as CenturyLink is proposing to do, that will help remediate the call failures. Even if a carrier cannot implement the safe harbor, or even if it is not subject to federal reporting requirements, it may be able to reduce the number of intermediate carriers in its call paths. The reductions can be accomplished either through new interconnection agreements or through new construction.

Step 4

Promote transparency in the use of downstream carriers.

36. Prior to the time that federal and state authorities began to investigate the rural call completion failures, many of the intermediate carriers were hidden from view. Some continue to resist relevant disclosures. The lack of transparency lessens accountability. It also hampers the Board's ability to understand and address the difficulties. Under the FCC's rules, as one of the conditions for the safe harbor, covered providers must certify that any nondisclosure agreements with intermediate providers permit disclosure of the identity of the intermediate provider and any additional intermediate providers to the Commission and the affected rural local exchange carrier. 47 C.F.R. § 64.2107. Regardless of whether a carrier takes advantage of the federal safe harbor, and regardless of whether a carrier is subject to federal reporting requirements, a commitment to certify that any nondisclosure agreement permits disclosure to the Board of both the identity of any intermediate providers and the relevant contract would increase transparency and therefore contribute to a long-term solution.

Step 5

Actively participate in the standard-setting work of the Alliance for Telecommunications Industry Solutions.

37. The FCC has applauded efforts by the Alliance for Telecommunications Industry Solutions (ATIS) to diagnose problems in call routing, cooperate on finding solutions and adopt best practices aimed at solving the problem. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 16154 (FCC Nov. 8, 2013) ¶ 12. Such efforts must

continue, because the development of industry standards for call completion has not been completed.[12] Because all carriers must interconnect with the same public telephone network, and because interoperability and coordination are needed across all components of the network, wide industry participation in this work will help. The metrics must be specific to the particular technologies. When and as new standards are developed, companies should report them to the Board, so the Board can ensure they adequately protect consumers and are followed. In time, as the standards are more fully developed for all technologies, the Board, either on its own for intrastate calls or in partnership with the FCC for all calls, should consider giving these standards, or some of them, with any modifications that public comment may require, the force and effect of law. See and compare 199 IAC 22.5(3).[13]

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[12]Through its Next Generation Interconnection Interoperability Forum (NGIIF), ATIS has worked with carriers and utility commissions to generate an "Intercarrier Call Completion/Call Termination Handbook" (ATIS Handbook) that describes industry standards and best practices that carriers can follow to address call completion issues and manage intermediate carriers. See *In re Complaint of Frahm*, No. FCU-2013-0007, Verizon resistance to motion to compel, filed July 11, 2014, p. 5. The ATIS Handbook, approved August 2012 and updated March 2013, is an excellent start at addressing the technical challenges but is not a finished product. On its own terms, it is "a living document" describing "some" of the problems being encountered and discussing "some" of the industry standards and practices relevant to ensuring call completion, particularly signaling, routing and trouble handling. ATIS Handbook, § 1.1. According to the handbook, carriers need to establish "Direct Measures of Quality" ("DMoQs"), such as "Call Completion Rate" and "Post Dial Delay," for their vendors to meet. The handbook does not, however, provide any standard or norm for what an acceptable metric value might be. See ATIS Handbook, § 5.6 and Table 2. Some of the SIP (Session Initiation Protocols) mechanisms are not yet standardized. ATIS Handbook, § 4.1.1.3.

[13]The cited subrule contains specific standards that local exchange carriers must meet, among them: (i) complete dialing of called numbers on at least 97 percent of calls without encountering an all-trunks-busy condition, during average busy-season busy-hour; and (ii) properly tested alarms on a 24-hour basis to indicate improper functioning of equipment.

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Step 6

Exercise responsibility over the use of downstream intermediate carriers.

38. Each originating and intermediate carrier that makes use of downstream intermediate carriers should have sound policies in place addressing each of the following elements:

- Establish and conduct standardized testing routines;
- Investigate on an ongoing basis whether downstream carriers have properly designed and properly functioning equipment, including properly designed and properly functioning software;
- Investigate on an ongoing basis whether downstream carriers have sufficient capacity in their switches and call paths to carry the traffic to the intended destinations;
- Require each downstream carrier on an ongoing basis to provide specific information regarding its system and the limitations of its system, including information regarding any difficulties its system may have interoperating with other systems using a different technology;[14]
- Require each downstream carrier on an ongoing basis to provide specific information regarding any bandwidth or other capacity constraints that would prevent its system from completing calls to particular destinations at busy times;
- Require each downstream carrier to have properly designed and properly functioning alarms in its system so as to ensure immediate notice of any outages on its system;
- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to ensure that the downstream carrier, if unable to complete a call, timely releases the call back to the upstream carrier (ATIS Handbook § 5.3);
- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to ensure that the downstream carrier, if making successive attempts to route the call through different lower-tiered

[14]The need for such sharing of information will commonly override a carrier's desire to treat the information regarding its system as confidential.

downstream carriers, timely passes the call to a second (or third or fourth) lower-tiered downstream carrier if a first (or second or third) lower-tiered downstream carrier cannot complete it;

- Require each downstream carrier to have properly designed and properly functioning mechanisms in place to detect and control looping, including the use of hop counters or other equivalent mechanisms that alert a carrier to the presence of a loop (ATIS Handbook § 4.1.3);

- Establish direct measures of quality and require downstream carriers to meet them (ATIS Handbook, § 5.6 and Table 2);

- Establish and implement appropriate sanctions for intermediate carriers that fail to meet standards;

- Require downstream carriers to manage lower-tiered downstream carriers and to hold lower-tiered downstream carriers to the same standards to which they themselves are held (ATIS Handbook § 5.8);

- Define the responsibilities of downstream carriers in an agreement (ATIS Handbook § 5 introduction).

Step 7

Provide copies of the Iowa portion of the federal data and the FCC's analysis of the Iowa data to the Board and OCA.

39. The Board cannot effectively evaluate problems and ensure the implementation of successful solutions without ready access to relevant sources of information. Nor can OCA adequately discharge its responsibilities to Iowa consumers without such access. The FCC's data collection processes, including the generation of call answer rate (CAR) and network effectiveness ratio (NER) statistics for each rural operating company number (OCN), including each rural OCN in Iowa, together with the FCC's analysis of these metrics, is specifically designed to provide relevant sources of information. For that reason, the Iowa data and the FCC's analysis of them would assist

the Board in addressing the rural call completion problem in Iowa and assist OCA in representing the interests of Iowa consumers. On an ongoing basis, a company reporting to the FCC should therefore provide copies of its Iowa data and the FCC's analysis of the Iowa data to the Board and OCA.

Step 8

Keep routing tables up-to-date.

40. Accurate routing tables are essential to successful call completion. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 15164 (Nov. 8, 2013) ¶ 42 & n. 49. If the tables are not properly updated, for example, some calls may fall into a loop and never be set up. *In the Matter of Rural Call Completion*, 28 F.C.C.R. 1569 (Feb. 7, 2013) (separate statement of Commissioner Ajit Pai). Due to consumer elections to switch carriers and to local number portability, among other factors, these tables are changing constantly. Routing tables must therefore be kept up-to-date. The updating should be done through the Local Exchange Routing Guide (LERG) of the Traffic Routing Administration.

Step 9

Provide periodic progress reports to the Board on implementation.

41. Each company should provide periodic reports to the Board regarding the progress it is making in fulfilling any commitments it makes.

Conclusion

OCA submits this report, to be read in conjunction with the reports referenced in paragraph 1, setting forth the results of its investigation and its conclusions regarding concrete steps that the companies can take toward a long-term solution.

Respectfully submitted,

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